Analysis of 1000 parts of Blood.		Analysis of 1000 parts of Serum.	
Globules	79.4	Organic matters	61.5
Fibrin	2.2	Inorganic matters	8.5
Organic matters of serum	56.2	Water	930.
Inorganic matters of serum	7.8		1000.
Water	854.4		
	1000.		

From the study of the chemical and physical properties of the blood in these five cases, it appears—

1. That far from presenting that state of dissolution which has generally been admitted, the blood, in scurvy, coagulates firmly, and the serum is uncoloured by globules.

2. That the density of the defibrinized blood was in all the cases below the normal standard, (1057.)

3. That the density of the serum is notably diminished, (1027.)

4. That the globules were in all cases below the mean, (127.)

5. That the fibrin was in no case diminished, but in some sensibly increased.

6. That there was a notable diminution of organic matters of the serum, of which albumen constitutes the principal part, whilst there was a considerable proportion of water.

7. That in no case was there an augmentation of the saline matters, or of alkaline substances.

[The above memoir concludes with some observations on the complete subversion which the predominant theories of scurvy have received by these researches. It was thought the fibrin was diminished, and hence the profuse hemorrhages, &c. It is proved by these analyses, as was previously ascertained by Mr. Busk, that it is, on the contrary, in excess. The theory of the alkalinity of the blood is equally opposed by the above facts, as is also another favourite theory of M. Andral, that when the albumen is diminished to a certain point, dropsy is the necessary consequence, for it was found that though the number of albumen was low, anasarca only appeared in one case, and that to a very trifling amount.]

MATERIA MEDICA AND PHARMACY.

15. *On Alkaline Medicines.* By M. Mialhe.—M. Trousseau has recently (see number of this Journal for July, 1846, p. 220), recalled attention to the fact that, when these are taken in too great a quantity, they increase the fluidity of the blood and deprive it of colour, and lead to cachexia, pallor, and general infiltration, passive hemorrhage, and an irreparable wasting—giving rise to far greater and more irremediable evils than the disease they are employed to combat, and causing just as much mischief as the abuse of iodine, mercury, or the preparations of iron. I propose here to indicate some of the circumstances under which alkalies may give rise to these ill consequences, and those of a contrary character, under which, perseveringly used, they may re-establish the deranged equilibrium of the economy.

First, we may observe that the administration of alkalies in excess does not give rise to so much mischief as does a similar abuse of acids. In the state of health the three principal fluids of the body, the chyle, the lymph, and the blood, are alkaline, and the amount of alkaline base they contain is incomparably greater than the amount of acids contained in other fluids. It is then in an alkaline medium that the animal organic mutations are operated, while in plants it is always in a neuter or acid medium that the phenomena of nutrition take place. The alkalies fulfil a far more important function in the economy than that of mere exciters and fluidifiers, presiding as they do over the decomposition and assimilation of hydro-carbonaceous substances of the amylaceous or cellular families.

But however the blood and other liquids may be physiologically a little more

or a little less alkaline, it does not follow that they may be inconsiderately administered. They stand at the head of the agents which exert on the serum the most marked fluidifying action. All the alkalies affect our economy in an identical manner. They produce on the organ of taste an impression *sui generis*, designated as *alkaline* or *urinary*. M. Chevreul showed this to be always due to the same substance, ammonia, which is set free by the decomposing effect exerted by the alkaline base on the hydrochlorate of ammonia contained in the buccal fluids. Experience has shown that, the same chemical fact prevails in respect to the bicarbonates and carbonates, and all the other fluids of the living body. Hence, wherever we introduce any alkaline substance into the economy, a certain quantity of ammonia is set free. This explains why the ingestion of a certain quantity of bi-carb. soda dissipates the symptoms of drunkenness—the ammonia disengaged restores to the albuminous elements of the blood that fluidity which the coagulating action of alcohol had partially deprived them of.

Under what circumstances is the employment of alkalies efficacious or dangerous? Clinical observation shows us that the daily taking of a drachm or a drachm and a half of bicarbonate of soda, or its equivalent of any other alkali, so far from being generally injurious, is frequently advantageous. Many persons can take far larger doses with impunity, while much smaller ones have, in some cases, induced serious accidents. All substances which produce an acid predominance in the blood allow of a large quantity of alkalies being taken. Thus, the inactive inhabitants of towns, in whom there is hardly any acid secretion from the skin, especially in winter, will bear large doses of alkalies. It is the same with those who live upon an almost exclusively meat diet, inasmuch as the albuminized elements containing sulphur and phosphorus, these two elements produce, by their interstitial combustion, phosphoric and sulphuric acids in marked proportions. This explains why the urine of the carnivora is normally acid, that of the herbivora always alkaline. On the other hand, whatever favours the predominance of alkalies in the vital humours forbids their employment. Thus the laborious inhabitants of the country, in consequence of their abundant acid sweats, can ill bear the ingestion of alkalies. So with persons who adopt an exclusively vegetable regimen, the blood is normally rich in carbonate of potass, by means of the transformation which the salts of potass in combination with the organic acids have undergone. Lastly, there are certain pathological conditions which lead us to vary the amount of alkalies given. Who does not know that in gout, gravel, and especially diabetes, immense quantities of these may be given? and who is not aware that certain summer and autumn putrid affections will not tolerate them?

Clinical observation has long shown that the various alkalies may replace each other in practice. This is the case with carbonate of lime and of magnesia: as also with the compounds of soda and potass. It has been erroneously stated that soda is more favourable to the animal constitution than potass. Analysis of the animal liquids shows that the potass compounds are equally prevalent with the soda, and as regards the herbivora, far more so. But, although we can in general, by the aid of any alkaline preparation, induce an identical medical result, we believe it is better to give the preference (as mere antacids) to those alkaline compounds which present the advantage of having always an uniform chemical composition, and of producing little or no therapeutical effect; and in these respects the hydrated calcined magnesia and the bicarbonate of soda seem to hold the first rank.—*Med. Chirurg. Rev.*, Oct. 1847, from *L'Union Médicale*, Nos. 1 and 4.

16. *On Alum Gargles.* By M. Mialhe.—We have shown elsewhere that the true *astringents* belong to the class of *coagulants*, that is to say, the class of chemical agents capable of entering into chemical combinations with the albuminous elements of the blood, and forming with them an insoluble compound. In applying this principle to *alum*, we showed how this substance, penetrating into our tissues, is first decomposed by the alkalies of the blood, so as to form an insoluble sub-salt, which is deposited in the organic tissues, filling their network, and, so to speak, tanning them. We pointed out how a new portion of alum, being no longer modified by the alkalies already saturated, then acts by fluidifying the albumen, in stimulating exhalation; and how, lastly, this *alum-albuminous fluid*, taken into the circulation, again becomes solid when it finds itself in presence of